

Recovery Plan Action Status

Plan Name: Recovery Plan for the Big Island Plant Cluster

Plan Status: Final

Plan Date: 26-Sep-96

Lead Agency: USFWS

Lead Office: Pacific Islands Fish And Wildlife Office

(808)

(792-9400)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), `Oha wai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), `Anunu (Sicyos alba)	1	111	Locate, verify and delineate all extant wild populations	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, U.S. Geological Survey, Biological Resources Division, National Park Service, Ola'a Kilauea Management Group	Research: Population Surveys	Contract	This is an ongoing action, as the status of the species and their threats change constantly. NOTE: For all tasks in this recovery plan, only the 13 species in the Big Island addendum are being addressed. The other 22 are addressed in the original Big Island plan.

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Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), `Oha wai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), `Anunu (Sicyos alba)	1	12211	Construct and maintain fencing	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners, Ola'a Kilauea Management Group	Management: Habitat Maintenance and Manipulation	Contract	This task is ongoing for OKMG, NWR, NPS, DOD, and DLNR. Additional fencing is planned for all of these lands. However, there are still areas of suitable habitat needed for recovery that are not fenced or planned.

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Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), `Oha wai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), `Anunu (Sicyos alba)	2	12212	Evaluate alternative means for control of ungulates	Complete	FY 1995 - FY 1999	FY 2000 - FY 2004	U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Habitat Maintenance and Manipulation	Contract	Studies on the control of feral ungulates have been conducted for numerous other areas, and the results of these studies are being used to determine the best method of ungulate control in suitable habitats for these species.

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Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), `Oha wai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), `Anunu (Sicyos alba)	1	12213	Consider eradication programs for control of ungulates	Discontinued	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources	Management: Habitat Maintenance and Manipulation	Contract	This task has been abandoned because the political climate in Hawaii at this time will not support island-wide eradication of nonnative ungulates, which are hunted for food.

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Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A`e (Zanthoxylum dipetalum var. tomentosum), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei)	1	12251	Determine impacts of wildfire on taxa	Complete	FY 1995 - FY 1999	FY 2000 - FY 2004	U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Management: Habitat Maintenance and Manipulation	Contract	The negative impacts of fire on Hawaiian ecosystems is now well understood, and efforts are necessary to control wildfire in any dry habitats.
Hau kuahiwi (Hibiscadelphus hualalaiensis), A`e (Zanthoxylum dipetalum var. tomentosum), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis)	1	12252	Develop and implement fire protection and response plan(s)	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners, Ola`a Kilauea Management Group	Management: Habitat Maintenance and Manipulation	Contract	Fire plans have been developed and are being implemented for Puu Waawaa (DLNR), Hawaii Volcanoes National Park (NPS) and Pohakuloa Training (DOD). Some of the species do not inhabit high fire risk habitats.

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Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	252	Study pollination ecology	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Population Surveys	Contract	The current knowledge has been gathered mainly from incidental observations during field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.

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Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	253	Study germination and seedling establishment	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Population Surveys	Contract	The current knowledge has been gathered mainly from incidental observations during field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Oha wai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	31	Identify populations for augmentation	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Planning	Contract	Any population of a short-lived perennial with fewer than 50 mature individuals and a long-lived perennial with fewer than 25 mature individuals that do not exhibit increased reproduction after the major threats are managed is considered for augmentation.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	32	Propagate material for augmentation	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources, U.S. Department of Defense	Management: Propagation	Contract	Volcano Rare Plant Facility propagates many species for augmentation by NPS, OKMG, DLNR, and various private landowners with grants from ES or DLNR. DOD has their own facilities to propagation material for augmentation.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	33	Prepare sites and augment wild populations	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Reintroduction	Contract	Augmentations are occurring for some species on NPS, OKMG, DLNR, and various private landowners lands, and are planned on DOD lands.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	34	Maintain, monitor and evaluate outplantings	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Reintroduction	Contract	This is an ongoing action, as the status of the species and their threats change constantly, and is currently not occurring as frequently as it should - at least once a year.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	3	41	Select new population sites, and obtain approval and long-term protection for site	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service	Management: Planning	Internal Administrative	Sites have been selected on NPS, NWR, OKMG, DLNR, DOD, and various private landowners lands for reintroduction.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	3	42	Control threats to plants at new sites	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service	Management: Habitat Maintenance and Manipulation	Contract	Threat control is occurring on NPS, NWR, OKMG, DLNR, DOD, and various private landowners lands for reintroduction.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	3	43	Transplant selected material	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service	Management: Reintroduction	Contract	Reintroduction is occurring on NPS, NWR, OKMG, DLNR, DOD, and various private landowners lands for reintroduction. However, more reintroductions are needed to recover most of the species in this plan.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	1	44	Maintain, monitor and evaluate new populations	Ongoing Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service	Management: Habitat Maintenance and Manipulation	Contract	This task is ongoing whenever new populations are located.

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Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Oha wai (Clermontia drepanomorpha), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	3	51	Validate the number of individuals and populations necessary for recovery of each taxon	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Population Surveys	Contract	

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Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	3	52	Refine/revise downlisting and delisting criteria, as necessary	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division	Management: Planning	Contract	

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Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	3	53	Evaluate species for downlisting and delisting	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division	Management: Planning	Internal Technical Assistance	